several such cases menstruation has subsequently occurred. In only a few cases is menstruation regular after ovarian grafting. It usually recurs at longer intervals than normal—that is to say, every six weeks or two months. Some patients menstruate a few times and then cease and minor symptoms of the menopause may appear. Bell's conclusions, based on a fair experience, lead him to advocate very strongly the practice of ovarian grafting in suitable cases. Nervertheless, he insists that this procedure be looked upon as a measure of necessity, which can never be weighed in the balance against the preservation of the natural connections of the normal ovary.

PATHOLOGY AND BACTERIOLOGY

UNDER THE CHARGE OF
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A Study of the Oxidase Reaction with A-Naphthol and Paraphenylendiamine Tumors.—The work reported by MENTEN (*Jour. Cancer Res.*, 1920, v, 321) consists in the application to tumor tissue of an oxidase technic previously studied in detail in various types of normal tissue. The reagent used was an aqueous solution of a-naphthol and paraphenylendiamine and when frozen sections of tumors were placed in this solution there developed within them a blue violet color whose intensity varied according to the type of tumor and the functional activity of its cells. While diverse types of neoplasms were studied the most striking results were obtained in fibrosarcomata where all gradations of color from a maximum in the degenerating areas to a faint reaction in the actively growing parts were met with. In the latter the color appeared only in the fine perinuclear granules which had a faint mauve appearance. The nucleus was free from any reaction. As the cell matured the reaction deepened to a violet in the perinuclear region and the chromatin was perceptible in the nucleus as faint mauve threads and knots. When through lack of adequate blood supply degenerative changes occurred in the cells the oxidase reaction became still further increased in the perinuclear granules and the nucleus and finally in the late stages of the degenerative process the whole cell protoplasm was converted into clumps of blue-black stained material. An attempt is made to interpret the phenomenon observed on a physicochemical basis. Since the development of the color is dependent upon the oxidation of the reagent and oxidation is due primarily to the acquisition of a positive electric charge it is postulated that any increase in the intensity of the color is due to the liberation of a positive charge within that tissue. That increased acidity occurs in degenerating tissues is a well attested fact. The liberation of this positive charge within the cell is accompanied by conversion of potential into kinetic energy. In the actively growing parts where the oxidase reaction becomes progressively diminished, the reverse process occurs. It is assumed that it is those granules with high lability as manifested by wide variations in the oxidase reaction which most readily tend to become the primary site of metabolic changes of the nature of an anaplasia.

The Peroxide Reaction in Three Cases of Multiple Myeloma of the Bones with Remarks Concerning the Nosological Position of these Tumors.—Owing to the lack of definite knowledge concerning the origin of the cellular elements of multiple myeloma of the bones, a considerable confusion as to their proper classification has arisen. The various views which have been suggested as to the histogenesis of these rare tumors are fully discussed by MORSE (*Jour. Cancer. Res.*, 1920, v, 345) who has studied three cases, the autopsy findings of which are reported in detail. The gross appearance of these new growths is very characteristic. They arise in the bone marrow by multiple foci whose extension causes marked erosion of the bone. There is little or no tendency to callus formation or reparative processes. Metastases occurred in one of the cases reported by Morse. Microscopically the tumors are composed of cells irregularly oval in outline and contain an eccentrically placed nucleus. The nucleus is vesicular and shows a characteristic mural arrangement of the chromatin. The protoplasm is basophilic. Because of the close resemblance morphologically of these cells to the plasma cell and further because they react negatively to both Goodpasture's and Evan's oxidase technic, Morse concludes that they are not of myeloblastic origin and have no relationship to the leukemic group, but that "they spring from a series of cells whose specific function is bone absorption." It is suggested that they are related to the osteoblast and may be considered as heteroplastic osteoblasts.

The Biliary Factor in Liver Lesions.—ROUS and LARIMORE (*Jour. Exp. Med.*, 1920, xxxii, 249) attempted to arrive at a better understanding of the share of bile in the causation of hepatic lesions distinguished by a cirrhosis with evidence of stasis in the finer bile ducts and inflammation in their walls, by producing in rabbits obstruction to the bile flow at different levels. The authors confirmed the work of previous investigation in producing bile stained parenchymal necrosis after obstruction of the common duct, which was followed by a spreading stellate cirrhosis and connective-tissue proliferation throughout Glisson's capsule, resulting finally in a roughly hob-nailed organ. This rabbit lesion is mixed, involving injury throughout the biliary tract. By causing local obstruction at different duct levels, the authors attempted to produce cirrhoses of uncomplicated types, resembling lesions in man. The bile duct and portal branch to the main liver mass of rabbits were ligated. There was found to result atrophy of the lobule and an evenly distributed monolobular cirrhosis. When the portal trunk of the main liver mass was ligated and seventeen to twenty-three days later the bile duct from this region was ligated, the main liver mass was found to have undergone atrophy. There was no icteric tinting of the parenchyma or dilatation of the bile passages. Evidently a very slight increase of